

Appl. No. 10/708,059
Amdt. dated May 13, 2005
Reply to Office action of March 16, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application :

5 **Listing of Claims:**

1. (currently amended) A method of building a wafer defect database, the wafer defect database comprising a defect classification recipe which is used for a defect classification machine to perform an automatic defect classification, the method of building the defect database comprising following steps:
- 10 (a) providing a first wafer with a plurality of defects thereon that were generated during a first semiconductor process;
- (b) performing a defect inspection to the first wafer to detect ~~detect~~ the defects;
- (c) providing a predetermined defect database which comprises a defect classification recipe corresponding to a second semiconductor process;
- 15 (d) utilizing the defect classification machine to perform ~~performing~~ an automatic defect classification according to the ~~defect classification recipe~~ predetermined defect database to separate the defects into a plurality of defect types;
- (e) performing a manual defect classification to verify the accuracy of the automatic ~~defect classification to each defect type; to separate the defects into a plurality of~~ defect types; and
- 20 ~~performing a verifying step to verify accuracy of the automatic defect classification for each defect type.~~
- (f) assigning the predetermined defect database as the wafer defect database when the accuracy of the automatic defect classification is qualified and setting up the predetermined database for online usage;
- 25 (g) performing an updating step to correct the predetermined defect database when the accuracy of a specific defect type of the automatic defect classification is not

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qualified, wherein the updating step comprises:

providing a second wafer with a plurality of defects, wherein the second wafer was generated from the first semiconductor process;

performing a defect inspection to the second wafer; and

5 collecting defect classification recipe of the specific defect type to correct the defect classification recipe within the predetermined defect database; and
(h) repeating steps (d), (e), (f), and (g) to complete the wafer defect database.

10 2. (cancelled)

3. (cancelled)

15 4. (original) The method of claim 1 wherein the second semiconductor process is a previous generation process compared to the first semiconductor process with the same design rule.

5. (original) The method of claim 1 wherein the first semiconductor process and the second semiconductor process have similar patterns or defect types.

20 6. (currently amended) A method of an automatic wafer defect classification comprising:
providing a wafer with a plurality of defects thereon that were generated during a first semiconductor process;
performing a defect inspection to detect the defects;
providing a defect database which comprises a defect classification recipe
25 corresponding to a second semiconductor process; and
performing an automatic defect classification according to the defect recipe to separate the defects into a plurality of defect types.

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7. (currently amended) The method of claim 6 further comprising a verifying step to verify accuracy of the automatic defect classification for each defect type, the verifying step comprising:

- 5 performing a manual defect classification to the defect; and
 utilizing the result from the manual defect classification to verify the accuracy of the
 automatic defect classification.

8. (cancelled)

- 10 9. (currently amended) The method of claim 7 further comprising a step of updating the defect database if the accuracy of the automatic defect classification is not qualified, the step comprising:

- collecting defect information from another wafer respective to the classification type
 with unqualified accuracy according to the result of the manual defect classification;
15 correcting the defect database according to the defect information; and
 repeating the verifying step.

10. (cancelled)

- 20 11. (original) The method of claim 6 wherein the second semiconductor process is a previous generation process compared to the first semiconductor process with the same design rule.

12. (original) The method of claim 6 wherein the first semiconductor process and the second semiconductor process have similar patterns or defect types.

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